REMARKS

Claims 7-26 are pending in this application. By this Amendment, Applicant cancels claims 1-6, amends claim 14, and adds claims 21-26.

The Office Action rejects claims 7-10, 12-17, 19, and 20 under 35 U.S.C. §102(e) over U.S. Patent 6,356,689 to Greywall. Applicant respectfully traverses the rejection.

Applicant appreciates the courtesies shown to Applicant's representative by Examiner Coleman in the January 29, 2004 personal interview. Applicant incorporates a separate record of the substance of the interview into the following remarks.

As discussed during the personal interview, Greywall does not disclose forming a gap in the insulation layer that at least partially thermally isolates the silicon structure from the substrate, wherein a surface of the substrate under the gap in the insulation layer is maintained substantially un-etched, as recited in claim 7. In rejecting claim 7, the Office Action alleges that Greywall discloses forming a substrate 202A, forming an insulation layer 204A over at least part of the substrate, forming a silicon layer 410 over at least part of the insulation layer, forming a silicon structure in the silicon layer (no structure cited), and forming a gap (no structure cited) in the insulation layer.

As discussed during the personal interview, according to the disclosure of Greywall, there are only two structures that can reasonably be considered gaps formed in the insulation layer 204A. The first gap, trench 412, is formed by etching the silicon layer 206A and the insulation layer 204A in order to electrically isolate mirror 410 (column 6, lines 5-26; Figures 4A-4H). It is apparent from Figures 4A-4H of Greywall and the associated disclosure, that trench 412 is a vertical etch through silicon layer 206A and the insulation layer 204A that does not undercut the silicon layer 206A at any point. Because the trench 412 does not undercut the silicon layer 206A providing a gap between the silicon structure (410) in layer 206A, and the substrate 202A, the trench 412 cannot thermally isolate the silicon structure

(410) in layer 206A, from the substrate 202A. Therefore, as discussed at the personal interview, the formation of the trench 412 in Greywall cannot reasonably be considered to disclose, teach, or suggest forming a gap in the insulation layer that at least partially thermally isolates the silicon structure from the substrate, as recited in claim 7.

Furthermore, as discussed at the personal interview, the second gap, hole or channel 422, in Greywall, not only produces a gap in the insulation layer 204A under the silicon layer 206A, but also continues through the entire substrate 202A. As such, the surface of the substrate under the gap in the insulation layer is not maintained substantially un-etched, as recited in claim 7. Therefore, as discussed at the personal interview, the step of forming a hole or channel 422 in Greywall cannot be reasonably considered to disclose, teach, or suggest the step of forming a gap in the insulation layer that at least partially thermally isolates the silicon structure from the substrate, wherein the surface of the substrate under the gap in the insulation layer is maintained substantially un-etched, as recited in claim 7.

Because the trench 412 and the hole or channel 422 are the only two structures that can be considered gaps formed in the insulation layer 204A of Greywall, and neither the forming of the trench 412 nor the forming of the hole or channel 422 discloses forming a gap in the insulation layer that at least partially thermally isolates the silicon structure from the substrate, wherein a surface of the substrate under the gap in the insulation layer is maintained substantially un-etched, as recited in claim 7, claim 7 is patentable over Greywall. Further, it is respectfully submitted that claims 8-10, 12, and 13 are patentable at least in view of the patentability of claim 7 from which they depend, as well as for the additional features they recite. Accordingly, Applicant respectfully requests that the rejection of claims 7-10, 12, and 13 be withdrawn.

By this Amendment, Applicant amends claim 14 to recite a method for fabricating a thermo-optical switch. Support for this amendment may be found at least in paragraph [0014]

of Applicant's specification. Greywall discloses a method for manufacturing an optical cavity, rather than a thermo-optical switch. As a result, as agreed upon at the personal interview, claim 14 is patentable over Greywall. Further, it is respectfully submitted that claims 15-17, 19, and 20 are patentable at least in view of the patentability of claim 14 from which they depend, as well as for the additional features they recite. Accordingly, Applicant respectfully requests that the rejection of claims 14-17, 19, and 20 be withdrawn.

The Office Action rejects claims 11 and 18 under 35 U.S.C. §103(a) over Greywall. Applicant respectfully traverses the rejection.

The rejection is premised upon the assumption that Greywall discloses all of the features of claims 7 and 14. Because, as discussed above, Greywall does not disclose all of the features of claims 7 and 14, the rejection is moot. As a result, Applicant respectfully requests that the rejection of claims 11 and 18 be withdrawn.

By this Amendment, and as discussed at the personal interview, Applicant adds claims 21-26 substantially corresponding to previously withdrawn and currently cancelled claims 1-6. Applicant requests that claims 21-26 be examined with 7-20 for at least the following reasons.

The Patent Office did not meet its burden under MPEP § 806.05(f) in the Restriction Requirement set forth in the March 13, 2003 Office Action (paper No. 3), in that the Patent Office has failed to show that inventions I and II are distinct. Particularly, the Patent Office has failed to show that the alternative method for fabricating a micromachined device proposed by the March 13, 2003 Restriction Requirement is distinct from the method claimed in claim 7 or 14. On the contrary, the alternative method proposed by the March 13, 2003 Restriction Requirement is clearly anticipated by the methods recited in claims 7 and 14.

The March 13, 2003 Restriction Requirement alleges that the micromachined device of canceled claims 1-6, now added claims 21-26, could be made by forming an insulation

layer on the substrate, etching an opening in the insulation layer to expose the surface of the substrate, and bonding the silicon structure to the resulting substrate, thereby creating a gap that at least partially thermally isolates the silicon structure from the substrate. However, the alleged step of forming an insulation layer on the substrate is anticipated by the "forming an insulation layer over at least part of the substrate," as recited in claims 7 and 14. The alleged step of etching an opening in the insulation layer to expose the surface of the substrate is anticipated by "forming a gap in the insulation layer," as recited in claims 7 and 14. Finally, the alleged step of bonding the silicon structure to the resulting substrate is anticipated by "forming a silicon layer over at least part of the insulation layer," as recited in claims 7 and 14. It should be noted that the common dictionary definition of "forming" is very broad and encompasses, for example, "making," "producing," " shaping," "molding," "organizing," "arranging," "fashioning," "developing," and "composing."[1] Therefore, the proposed process of the March 13 Restriction Requirement is not materially different than the process for making a micromachined device of claims 7-20.

As the Examiner has failed to identify a process materially different than that of claims 7-20 for making the micromachined device of claims 1-6, the Restriction Requirement must be withdrawn (MPEP 806.05(f)).[2]

In view of the foregoing, Applicant respectfully submits that this application is in condition for allowance. Applicant earnestly solicits favorable reconsideration and prompt allowance of claims 7-26.

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[1] The American Heritage College Dictionary, 3rd Ed. 535.

[2] "If applicant convincingly traverses the requirement, the burden shifts to the examiner to document a viable alternative process or product, or withdraw the requirement."

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, Applicant invites the Examiner to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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